

No. 848,755.

PATENTED APR. 2, 1907.

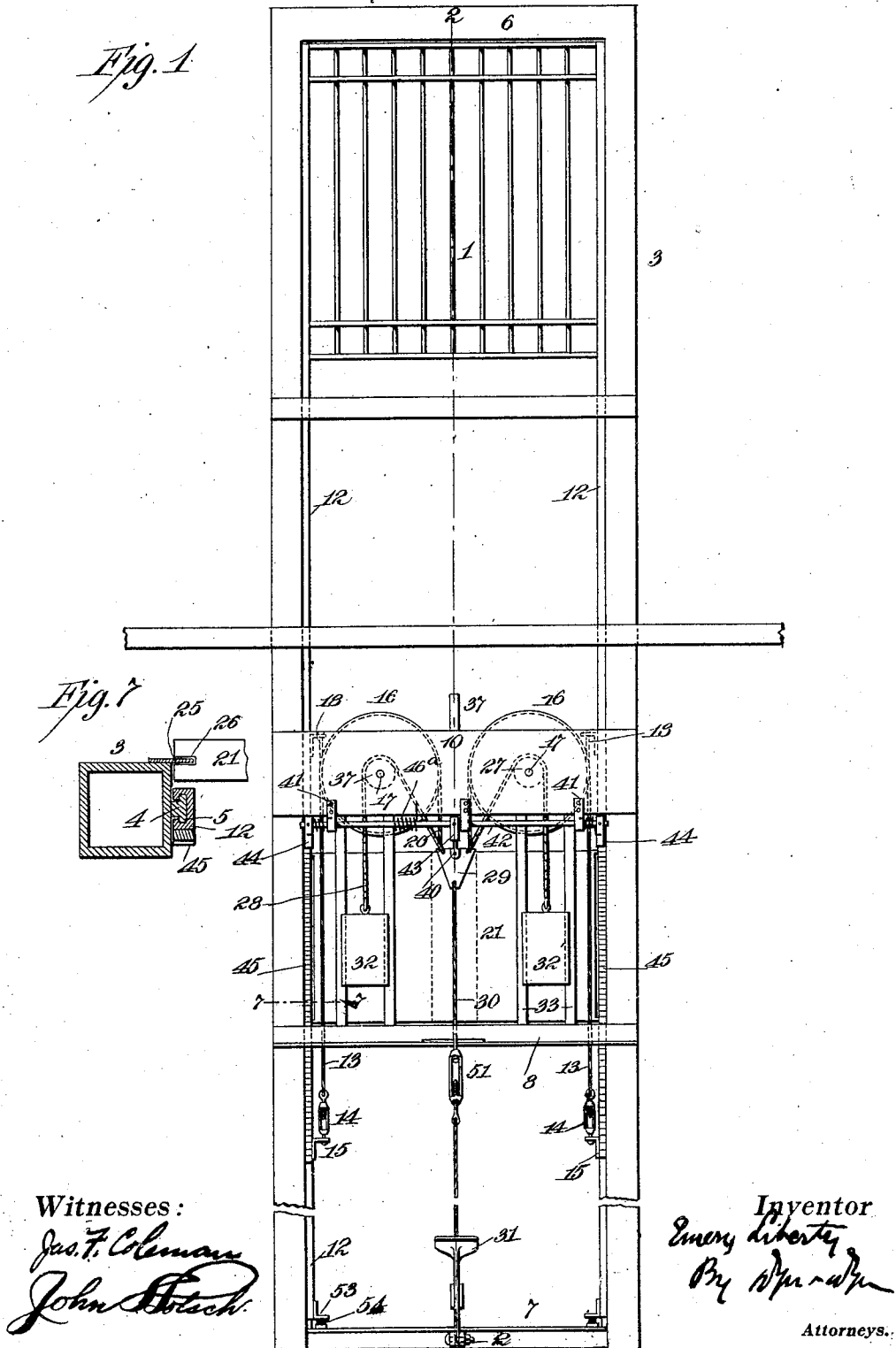
E. LIBERTY.
TELLER'S WINDOW.

APPLICATION FILED NOV. 7, 1904. RENEWED MAR. 21, 1906.

3 SHEETS—SHEET 1.

Fig. 1

Fig. 7



Witnesses:

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John F. Stach

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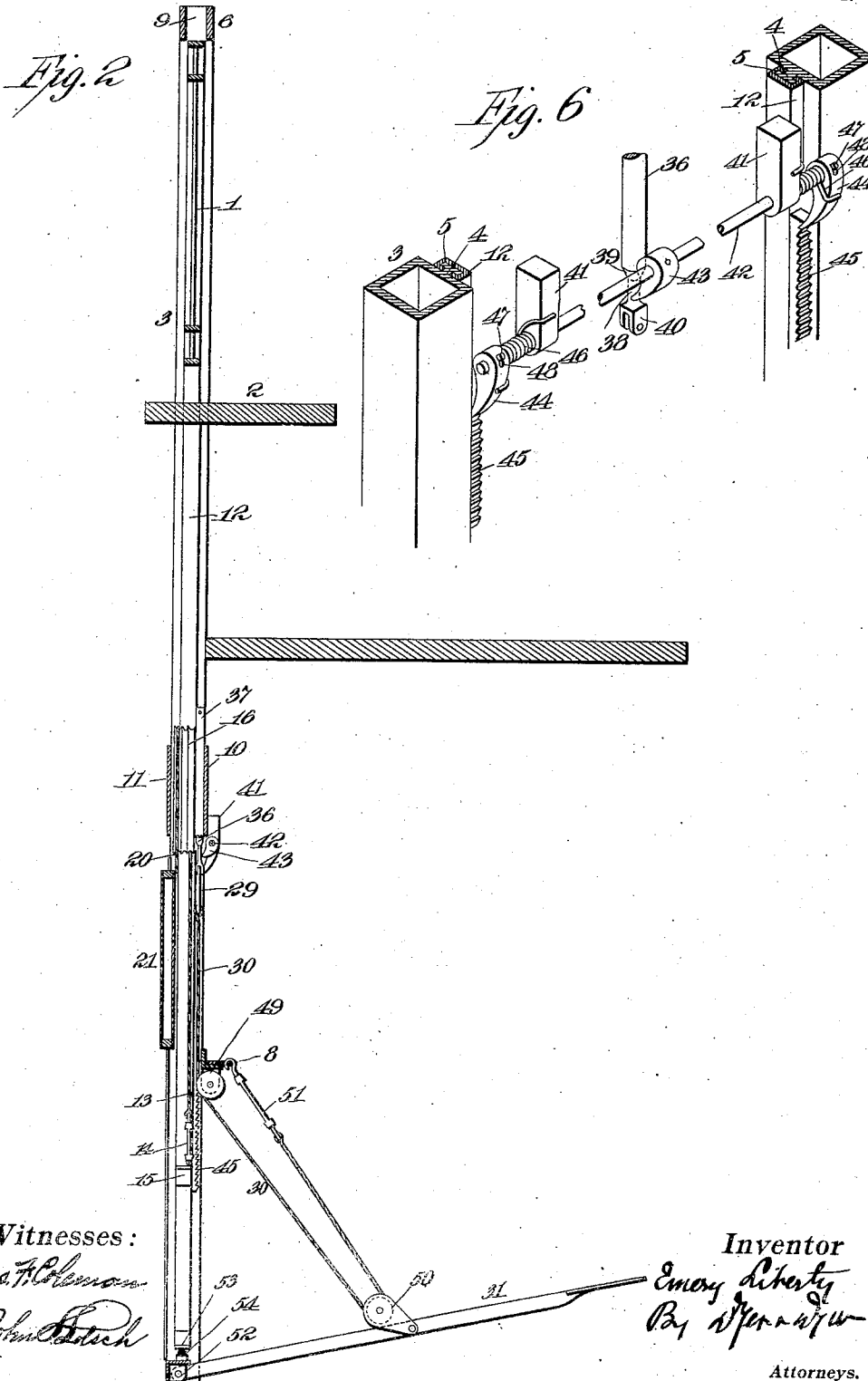
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3 SHEETS—SHEET 2.



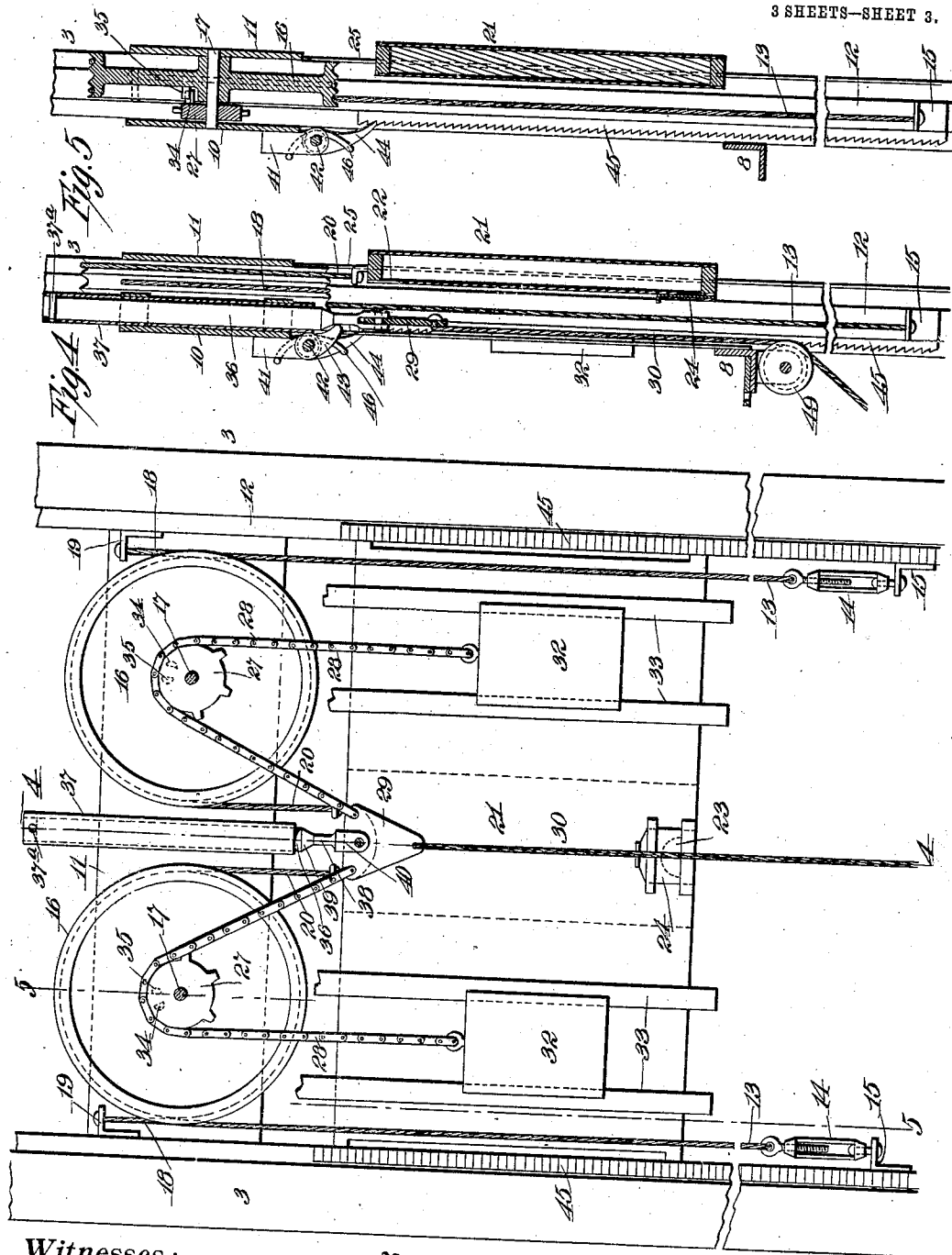
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3 SHEETS—SHEET 3.



Witnesses:

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Fig. 3

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UNITED STATES PATENT OFFICE.

EMERY LIBERTY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO DAVID NEVIUS, OF NEW YORK, N. Y.

TELLER'S WINDOW.

No. 848,755.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed November 7, 1904. Renewed March 21, 1906. Serial No. 307,256.

To all whom it may concern:

Be it known that I, EMERY LIBERTY, a citizen of the United States, residing in the borough of Manhattan, city of New York, county and State of New York, have invented certain new and useful Improvements in Tellers' Windows, of which the following is a specification.

In my patent, No. 774,190, dated November 8, 1904, I describe a form of tellers' window which may be opened by a pedal or crank and automatically closed and provided with a lock which will be effective at all times when the window is open to any extent to prevent further opening.

The present invention relates to such type of window.

The objects I have in view are to simplify the construction and increase the strength and certainty of operation by reducing the number of parts and substituting drums and cords or chains for racks and pinions.

Another object is to decrease the thickness of the structure so that it may be applied to existing counters without extensive alterations being required.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a window and operating mechanism embodying my invention. Fig. 2 is a vertical section taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged front elevation of the mechanism, certain parts being removed for greater clearness. Fig. 4 is a section taken on the lines 4 4 of Fig. 3. Fig. 5 is a section taken on the lines 5 5 of Fig. 3. Fig. 6 is a perspective view of the locking mechanism, and Fig. 7 is a section taken on the lines 7 7 of Fig. 1.

In all of the views like parts are designated by the same reference characters.

The gate or wicket 1 is arranged above the counter 2 and slides in ways carried upon the frame 3. This frame extends from the floor to a point above the window and is preferably formed of hollow metallic members of rectangular cross-section, as clearly shown in Fig. 6. To each of these side members is a track 4, which extends from the top to the bottom of the frame. Each track has an enlarged T-shaped head 5. (See Fig. 6.) The framework is secured together by cross mem-

bers 6, 7, and 8 at the top and bottom and intermediate thereto, respectively. The upper cross member 6 has an open slot 9, through which the window may be elevated. (See Fig. 2.) The cross-pieces 7 and 8 may be angle-irons, as shown. Additional cross-pieces 10 and 11, secured to the front and back, respectively, of the frame, are in the form of wide plates. These also serve as a support for parts of the elevating and locking mechanism.

The gate 1 is provided with slides 12 which engage with the tracks 4 and extend downward some distance below the counter. These slides are of substantially the same cross-section as the track 4, (see Figs. 6 and 7,) so that they will be retained by the enlarged head 5 and give an extended bearing-surface to prevent displacement of the gate and prevent buckling of the slides. The gate is elevated by mechanism secured to the slides 12 near the lower extremities thereof, and for this reason the particular cross-section of the track and slides shown is of service to withstand the strains incident to elevating the gate.

Near the bottom of each of the slides 12 is secured a flexible tension member 13, such as a flexible wire rope or chain. These ropes are preferably provided with turn-buckles 14 to take up slack and are connected to the slide by brackets 15, so that the rope will not come in contact with the slide and a straight pull is secured. Each of the ropes 13 is wound around a wheel, such as a drum or pulley 16, carried on a shaft 17, secured to the plates 10 and 11, and has its end secured to the drum. The drums 16 are each provided with three peripheral grooves. (See Fig. 5.) Within one of these rests the rope 13. Within the other two grooves are a guide-rope 18 secured to a bracket 19 on the slides 12 at a point above the drums, and a rope 20, secured to a counterbalance-weight 21. The ends of both of these ropes are secured to the drums. Chains may be employed in lieu of ropes, if desired. The counterbalance-weight is made box-like in form and is preferably made with a central chamber, within which shot or other additional weight may be inserted. The shot may be introduced within an opening 22 at the top and removed through a window 23 at

the bottom. This window is normally closed by means of a door 24. By employing shot the amount of counterbalance may be very nicely adjusted. The two ropes 20 from the two drums 16 are both connected to the counterbalance-weight, so that it will tend to turn the two drums equally. The counterbalance-weight is guided by means of ways 25, (see Fig. 7,) secured to the side members 3 and engaging within notches 26, formed in the counterbalance.

The shafts 17 in addition to the drums 16 carry sprockets 27. Over these sprockets are passed the chains 28, the bight engaging with the teeth of the sprockets. The inner ends of the chains are secured together or to a plate 29. To this plate is attached a chain or rope 30, to which is connected the pedal 31. The other extremities of the chains 28 are connected to counterbalances 32, such counterbalances being preferably in the form of rectangular leaden weights mounted within guides 33, the ends of said guides being connected to the cross-pieces 8 and 10. With this arrangement the counterbalances 32 will slide on a plane parallel to the counterweight 21; yet the two sets of counterbalances will not interfere in any way. Each of the sprocket-wheels 27 is provided with a pin 34, which is adapted to engage with a pin 35, (see Fig. 5,) carried by the drum 16, and rotate the latter. The pins 34 and 35 constitute a lost-motion clutch connection, by means of which either the sprocket or the drum may be rotated as much as a complete revolution without rotating the other, but while in contact will make a positive connection.

The plate 29 is secured to a rod 36, which slides within a tube 37, attached to the plate 10 and which serves as a bearing, a pin 37^a serving as a stop to limit upward movement. The rod 36 has a reduced portion 38 and above that an inclined portion 39, forming a cam. (See Figs. 3 and 6.) The lower extremity of the rod 36 is provided with a bifurcated fitting 40, which straddles the plate 29 and is connected thereto by a pin, as shown, so that the plate may oscillate slightly, if necessary.

On each side of the plate 10 is provided a bearing 41, within which is mounted a shaft 42. To the center of the shaft is secured a finger 43, arranged to be engaged by the rod 36. At the extremities of the shaft 42 are clutches, which may be in the form of dogs or ratchet-pawls 44, and these dogs are adapted to engage with rods 45, carried by the slides 12, the said rods being preferably provided with teeth to constitute racks. The dogs are caused to engage with the racks by means of springs 46. Each end of the shaft is provided with a pin 47, which passes through a slot 48 in each dog and by means of which the dogs may be disengaged from the racks

by a partial revolution of the shaft 42, the slots and springs allowing the dogs some independent play and permitting them to engage alternately with the ratchet-teeth, if necessary or desirable. An additional spring 46^a may serve as a means for engaging the finger 43 with the rod 36, although this end will be accomplished ordinarily by the springs 46 46. The elevating-cord 30 passes around a guide-pulley 49, mounted upon the cross-piece 8, and then around another pulley 50, carried by the pedal 31, the extremity being attached to a turnbuckle 51, secured to the cross-piece 8. This arrangement of pulleys serves as an amplifying-tackle and permits the elevation of the window by a pedal moving through a smaller arc than if such pulleys were not used. The inner end of the pedal is pivoted at 52 to the cross-piece 7.

The lower extremities of the slides 12 are provided with brackets 53, which engage upon cushions 54, of rubber or other elastic material, and reduce the jar of closing.

The operation of the device is as follows: The window is opened by the teller depressing the pedal 31. This will lower the plate 29, and with it the rod 36, moving the chains 28 and rotating the sprockets 27. When the rod 36 is in the elevated position, the finger 43 is opposite to and engages with the cut-away portion 38. As soon as the rod begins to descend the finger will engage with the cam portion 39 and oscillate the shaft 42 upon its bearings. This will disengage the two dogs 44 from the racks 45, and the slides 12 will be free to be elevated. The pins 34 35 are so arranged upon the sprockets 27 and drums 16 that they will not come into engagement until the lock has been released. As soon as the lock has been released the pins will engage, and the drums 16 will be rotated by means of the clutch connection. The rotation of the pulleys 16 will elevate the slides 12 and gate 1 through the cords 13, the weight of the gate and mechanism being relieved by the counterweight 21.

To close the window, pressure is removed from the pedal, and the counterweights 32 will descend, revolving the sprocket-wheels 27 backward, thus moving the pins 34 on the sprockets away from the pins 35 on the drums, thereby permitting the drums to revolve backward to allow the gate to close with more or less rapidity, as will depend upon the adjustment of the counterweight 21. The backward movement of the sprockets will elevate the cam-rod 36 to its normal position, and with it the pedal 31. When the cam-rod reaches its normal position, the finger 43 will be rocked into the notch 38 of the rod 36, thereby permitting the dogs 44 to fall into engagement with their racks 45. This will serve as an effective lock, which will prevent the window from being opened from the outside irrespective of its position. The

gate will descend, causing the dogs to ride up over the notches of the racks. This will cause an audible indicator, by means of which the teller will know that the gate is closing, and his attention will be sharply directed to any interference with the gate should the noise of the engaging dogs and ratchets cease.

The counterweights 32 will be sufficiently heavy to elevate the parts 31 and 36 with considerably greater speed than that attained by the gate in its closing movement, so that the dogs will engage with the racks as soon as pressure is removed from the pedal and before the gate has made any considerable progress in its closing movement.

In the specification I have described and in the drawings illustrated cords wound on the drums 16 and used for connecting the plate 29 and pedal 31; but it is to be understood that I do not limit myself to such use, as chains may be employed, if desired. In the claims, therefore, I desire the word "cord" to have the meaning of a flexible connection which will include a chain.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a teller's window, the combination with a gate, sliding in guides within the window, of a wheel, a flexible tension member connecting the gate and wheel, means for rotating the wheel and a lock for preventing open movement of the gate, the lock being actuated by the wheel-rotating mechanism.

2. In a teller's window, the combination with a gate sliding in guides within the window, of a wheel, a flexible tension member, connecting the gate and wheel, means for rotating the wheel, and a lock for preventing open movement of the gate, the lock being actuated to unlock the gate by a movement of the wheel-actuating mechanism in one direction, and to lock the gate on the reverse movement of the wheel-actuating mechanism.

3. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate and prevent opening of the gate, the clutch being actuated by the opening mechanism.

4. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the opening mechanism including a cam to actuate the clutch-operating mechanism.

5. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for

opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the clutch being secured upon a shaft, and means carried by the opening mechanism to rotate the shaft, and actuate the clutch.

6. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the clutch being secured upon a shaft, and a cam carried by the opening mechanism to rotate the shaft and actuate the clutch.

7. In a teller's window, the combination with a gate sliding in guides within the window, a plurality of rods carried by the gate, means for opening and closing the gate, clutches adapted to engage with the rods during the closing of the gate, the said clutches being carried upon a shaft, with means carried by the opening mechanism to rotate the shaft and actuate the clutches.

8. In a teller's window, the combination with a gate sliding in guides within the window, a plurality of rods carried by the gate, means for opening and closing the gate, clutches adapted to engage with the rod during the closing of the gate, the said clutches being carried upon a shaft, with means carried by the opening mechanism to rotate the shaft and actuate the clutches, and operating connections between the shaft and clutches.

9. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, the connections including a sprocket and a chain.

10. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, the connections including a sprocket and a chain, a lock for the gate, and a lost-motion connection between the sprocket and wheel.

11. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, and a lock for the gate, the said lock being controlled by the opening connections.

12. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the pedal and wheel for rotat-

ing the latter and opening the gate, the connections including a sprocket and a chain, and a lock for the gate, the said lock being controlled by the opening connections.

5 13. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel
10 for rotating the latter, and opening the gate, the connections including a sprocket and a chain, and a lost-motion connection between the sprocket and wheel, and a lock for the gate, the said lock being controlled by the
15 opening connections.

14. In a teller's window, the combination with a gate, sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and
20 connections between the pedal and wheel for rotating the latter and opening the gate, a rod carried by the gate, a clutch adapted to engage with the rod, and connections between the gate-operating mechanism and the
25 clutch for actuating the latter.

15. In a teller's window, the combination with a gate, sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and
30 connections between the pedal and wheel for rotating the latter and opening the gate, a rod carried by the gate, a clutch adapted to engage with the rod, and connections between the gate-operating mechanism and the
35 clutch for actuating the latter, the connections comprising a cam and a finger.

16. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and
40 connections between the pedal and wheel for rotating the latter and opening the gate, the said connections including a chain and a sprocket-wheel, and a counterweight.

45 17. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and connections between the pedal and wheel for
50 rotating the latter and opening the gate, the said connections including a chain and a sprocket-wheel, and a counterweight, and lost-motion connections between the wheel and sprocket and counterweight.

18. In a teller's window, the combination 55 with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel and gate, and a lock, of means for rotating the wheel and opening the window, and lost-motion connections between the wheel and the rotating means, for
60 permitting the tripping of the lock.

19. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member
65 connecting the gate and wheel, and a lock, of a pedal, connections between the pedal and wheel for rotating the wheel and opening the window, and lost-motion connections between the pedal and wheel for permitting the
70 tripping of the lock.

20. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, and a lock, of
75 means for rotating the wheel in one direction to open the window, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, and means for restoring the rotating means. 80

21. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, of means for
85 rotating the wheel in one direction to open the window, and a lock, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, means for restoring the rotating means, and means
90 for closing the window.

22. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, and a lock, of
95 means for rotating the wheel in one direction to open the window, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, means for restoring the rotating means, and means independent of the opening means for closing
100 the window.

This specification signed and witnessed this 5th day of November, 1904.

EMERY LIBERTY.

Witnesses:

JAS. F. COLEMAN,
JNO. ROBT. TAYLOR.